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ABSTRACT

This paper investigates a type of grammatical ill-formedness in English which is traceable to the repetition, under certain specified conditions, of present participles, e.g. the verb "continue" cannot occur with participles if it is in the present progressive. The solution to generalizing about ill-formedness of this type is by means of a derivational constraint which is formulated in such a way as to link certain features of remote structure to certain features of surface structure. The violation is not stated in terms of a restriction on transformations but rather as a static filter on the output of the syntactic component. This paper refines and formally states the requisite derivational constraint so that it is not too powerful. The author examines the consequences for linguistic theor y of postulating such a derivational constraint. The argument for using such a constraint, details on its development, and references are presented. (Author/VM)

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Doubl-ing

John Robert Ross

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0. In this paper, I will investigate a type of grammatical ill-formedness which is traceable to the repetition, under certain specified conditions, of present participles. Thus we find that the verb continue, which normally admits both infinitival and participial complements (cf. (1a) and (1b)), cannot occur with participles if it is in the present progressive (cf. the contrast between (1c) and *(1d)).

(1) a. It continued to rain.

b. It continued raining.

c. It is continuing to rain.

d. *It is continuing raining.

In what follows, I will attempt to show that what accounts for this violation is a derivational constraint in the sense of Lakoff (1970a), a constraint which must be formulated in such a way as to link certain features of remote structure[1] to certain features of surface structure. The relevant constraint thus has as a component an output condition, in the sense of Perlmutter (1970a) and Ross (1967). In §1 below, I will give a brief demonstration of the necessity of providing sufficient apparatus in the theory of grammar so that such static templates as output conditions can be stated in a grammar, as well as the more familiar syntactic transformations. In §2, I will show that doubl-ing violations of the sort exemplified in (1d) are not characterizable in terms of restrictions on transformations, but

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rather must be stated (in part) as a static filter on the output of the syntactic component. In §3, I will attempt to refine, and to state formally the requisite derivational constraint in such a way that it is not too powerful, i.e. so that it does not stigmatize as ungrammatical a wide class of sentences containing sequences of present participles which are in fact perfectly natural. Finally, in §4, I will examine the consequences for linguistic theory of postulating such a derivational constraint.

1. There are a number of ways of showing that some grammatical violation is best accounted for by setting up an output filter, leaving all transformations unconstrained. One kind of motivation, the kind I first suggested in connection with characterizing the possible postverbal sequences of constituents in English (cf. Ross (1967), §3.1.1.3), consists in showing that what can be treated as a unitary phenomenon, if stated in terms of output, must be stated many times, if formulated as conditions on syntactic transformations. Put more simply, if a grammar is only a sequence of transformations, what is intuitively a unitary phenomenon must be fragmented so as to appear as a scattered set of conditions throughout the syntax. Only if a grammar can contain both static filters, as well as transformations, can the relevant generalization be captured.

As a case in point, let us consider the interaction of possessives and demonstratives in English.

Note first that there are at least three distinct transformational sources for the possessive morpheme. These are shown in abbreviated form in (2).

(2) a. one petal which this tulip has ⇒ one petal of this tulip's

b. the execution of it ⇒ its execution

c. Poss+ing: That it is unprovable ⇒ Its being unprovable.

In (2a), I have stated in abbreviated form an analysis of possessives which is at least as old as Harris (1957). While it is not necessary to accept the claim that all possessor-possessed constructions have this source,[2] it does seem likely that at least some do.

Another source, at least as old as Lees (1960), and accepted by transformational grammarians of all persuasions, is illustrated schematically in (2b). The rule in question merely possessivizes and preposes to the left of certain abstract nominals any NP in an of-phrase which follows the nominal.

The final source (cf. (2c)) is the rule which, in the complements of certain predicates,[3] possessivizes the subject and participializes the main verb of the complement clause. In Rosenbaum (1967), this process is referred to

as Poss -ing Complementation, a usage which I will adopt here.

What is important for my present purposes is the fact that none of these three processes may operate in such a way as to produce an output in which one of the demonstratives (this, that, these, those) is followed by the possessive morpheme, as is shown by the ungrammaticality of the examples in (3).

(3) a. *One petal of this's fell off.

b. *That's execution was flawless.

c. *These's being unprovable made Euclid cry.

In order to capture the fact that these sentences are all deviant for the same reason, I propose the following restriction:

(4) Any surface structure analyzable into

$$X - \left\{ \begin{array}{l} \text{this} \\ \text{that} \\ \text{these} \\ \text{those} \end{array} \right\} - \text{Poss} - Y$$ is ungrammatical.

There is a very interesting sense in which the constraint stated in (4) can be said to be "stupid."[4] Namely, (4) is structure-independent. In the examples of (3), it is always the case that the demonstrative and the following constituent form an NP, but this is an accidental property of the examples. It would be incorrect to limit the applicability of (4) by

requiring the second and third terms of the condition to be analyzable into an NP, as the impossibility of converting the sentences in (5) to the corresponding sentences in (5') shows.

(5) a. The manner which an advocate of this had was irritating.

b. The discovery of a paper about that preceded my coronation.

c. That proofs of these are impossible made Euclid cry.

(5') a. *The manner of an advocate of this's was irritating.

b. *A paper about that's discovery preceded my coronation.

c. *Proofs of these's being impossible made Euclid cry.

The ungrammaticality of these sentences shows the necessity for casting the net wide, in this case: it appears to be true that any sequence of demonstrative and possessive, no matter what its source or parsing, produces a violation. Thus condition (4) is stupid, obtuse, scattershot. We shall see below, however, that not all output conditions have this one's wholesome crudeness. The condition necessary to exclude doubl-ing baddies is refined, sophisticated, and intelligent.[5]

2.

2.1. As a first step towards seeing that the condition involved in doubl-ing violations is connected with surface structure, observe that there are a number of distinct sources for the morpheme -ing. These are summarized in (6).

(6) a. Poss +ing complementation

b. Tense → ing in exclamations

c. Tense → ing in relative clauses

An example of the first type of -ing is (1b). Examples of the second type can be seen in (7c), which must be related to (7a) by some rule which marks the subject with the oblique case, and either deletes the tense entirely (as in (7b)), or replaces it with ing.[6]

(7) a. He likes blintzes.

b. Him like blintzes?!?

c. Him liking blintzes?!?

It is possible, though I have no proof of this at present, that the ing of sentences like (7c) will eventually be reducible to the ing of Poss +ing complementation, if it can be demonstrated that a deeper, performative analysis of such sentences as (7b) and (7c) is independently necessary.[7] That is, since the verb exclaim is a verb which takes Poss -ing complementizers, as (8a) shows, the underlying structure of (7b) and (7c) may be roughly that shown in (8b).[8]

(8) a. We exclaimed (to Shel's mother) at him liking blintzes.

b. I exclaim to you at him liking blintzes.

However, whether or not (6b) can be reanalyzed as a subcase of (6a), it seems to me unlikely that (6c) can be. I have in mind such sentences as those in (9), in asserting that some relative clauses are converted by rule to ing-clauses.

(9) a. Men sharpening knives were leering at us.

b. Men sharpening knives leer at us.

Intuitively, the underlined post-nominal modifiers in (9a) and (9b) differ in meaning. The most plausible sources for (9a) and (9b) would be (10a) and (10b), respectively.

(10) a. Men who were sharpening knives were leering at us.

b. Men who sharpen knives leer at us.

There is a well-known and uncontroversial rule, which I will refer to as Whiz Deletion, which could be used to convert (10a) into (9a), by deleting the underlined portion of (10a). It is this rule which accounts for the deletions suggested in (11).

(11) a. Tell me something (which is) valid.

b. I giggled at a man (who was) in the fishbowl.

However, there is no generally accepted analysis under which (10b) is converted into (9b). I propose that a transformational rule, which I will refer to as Stuff -ing (a preliminary version of which is formulated in (12)),

(12) Stuff-ing

$$X - [_{NP}\ NP - [_{S}\ NP - V - Y]_{S}]_{NP} - Z \xrightarrow{OPT}$$

$$1 \qquad\quad 2 \quad 3 \quad\ 4$$

$$1 \qquad\quad \emptyset \quad 3\#\underline{ing} \quad 4$$

is the mechanism which should be postulated to account for the synonymy of (9b) and (10b). This rule, as formulated there, Chomsky-adjoins ing to the right of the highest verb of a relative clause[9] whose subject has been relativized, and deletes the relative pronoun. A possible alternative analysis was suggested in Hall (1964). Under this analysis all stative verbs would derive from progressives by an obligatory deletion of a preceding be + ing, at some late stage of derivations, (thus (13a) would underlie (13b)),

(13) a. *Jim is resembling Quang in accent.

b. Jim resembles Quang in accent.

This alternative would seem to provide a plausible source for such otherwise troublesome modifiers as the underlined phrase of (14b), which would, in this analysis, be derived by Whiz Deletion from (14a).

(14) a. *Linguists who are resembling Quang should be denied the right to disseminate their smut.

b. Linguists resembling Quang should be denied the right to disseminate their smut.

However, as Ken Hale has brought to my attention, this alternative runs into difficulties when such sentences as (15) are considered.

(15) Anyone having been wounded should report at once to the infirmary.

If (16) were to be considered as a possible source for (15),

(16) *Anyone who is having been wounded should report at once to the infirmary.

it will entail postulating two underlying be + ing's, so that (17a) can be whiz deleted into (17b).

(17) a. *Anyone who is having$_1$ been working$_2$ on this for more than one year should resign.

b. Anyone having been working on this for more than one year should resign.

Presumably, then, since the first be + ing would somehow have to be deleted if the relative clause of (17a) stood in isolation, all such sentences as those in (18) would be ambiguous, having been derived either with or without this first be + ing.

(18) a. He has been coughing.

b. He is coughing.

It seems to me that this analysis does not hold much promise of overcoming the above technical problems. Also, one of Hall's original motivations for postulating a rule which deletes be + ing, namely, the fact that present adverbs like now, at this instant, etc., could appear with true progressives and statives, is not paralleled by the behavior of adverbs in sentences like Hale's: note that (15) becomes ungrammatical if at this instant is inserted into the ing-phrase. Thus, it appears that sentences like (15) provide fairly strong support for Stuff-ing.

Another piece of evidence in favor of this rule derives from such sentences as those in (19), which, though bookish, are certainly grammatical, in my speech.[10]

(19) These two examples, neither of which proving much in isolation, combine to make an iron-clad argument for Pre-Cyclic Buttering.[11]

Since no possessive morpheme can follow the subject in (19) (cf. *...neither of which's..., *...neither of whose...), it seems obvious that the ing in the subordinate clause here is not the result of Poss + ing complementation.

There are a number of problems which remain, but all in all, it does not seem unreasonable to postulate the existence of some rule like Stuff-ing to convert finite to non-finite relative clauses. Such an analysis allows an easy explanation for the second meaning of the phrase sharpening knives in (9), a meaning not accounted for if postnominal ing-phrases are only derived by Whiz Deletion, and it accounts readily for such otherwise problematic sentences as (15) and (19).

But -- if in fact there are two (or possibly even three) sources for ing, then note that there will have to be a condition upon each of the rules introducing this morpheme, forbidding its insertion if certain doubl-ing sequences would result, for all the sentences of (20) must be marked as deviant.

(20) a. *His keeping chanting ads bugs me.

b. *Him keeping chanting ads?!?

c. *Anyone keeping eating swordfish will regret it briefly.

The rule, whether phrase-structure or transformational, which introduces the complementizers Poss and ing, will have to be restricted to block (20a) and (20b) (or, if (20b) is not analyzed as a deep complement of an exclamatory verb, then (20b) will have to be stopped by a condition on the rule that forms exclamations). And in addition, an exactly parallel constraint will have to appear on the rule of Stuff-ing, to keep this rule from converting the well-formed clause who keeps eating swordfish into the ungrammatical postnominal modifier of (20c).

Thus one argument for the correctness of the claim that doubl-ing violations are to be characterized, at least partially, in terms of an output condition, has the same logical form as the argument I presented in Ross (1967) to the effect that the order of postverbal constituents in English was only to be described by an output condition. There I showed that the ungrammaticality of both the sentences in (21)

(21) a. *I thought up it.

b. *I handed Frederika it.

could be easily accounted for by an output condition which threw out any tree in which any constituent intervened between a verb stem and a following pronoun. Without output conditions, it would be necessary to place essentially identical constraints on two separate rules -- in this case, on

the rules of Particle Movement and Dative. In the case of (21), then, as in the case of (20), the availability of output conditions as part of the theoretical apparatus with which particular grammars are stated allows an otherwise uncapturable generalization to be stated. What is intuitively one fact must be stated several times in a theory which only provides transformations and conditions on transformations as types of theoretical machinery. This type of argumentation in favor of output conditions is also that which was used above in establishing the correctness of (4). Below, in §2.2, I will use a different kind of argument to show that doubl-ing violations are due in part to a violation of an output condition.

2.2

2.2.0 In this section, I will present a number of additional arguments for an output condition on doubl-ing clauses -- arguments which have a different logical form than those cited so far in support of output conditions. These are based on sentences which allow one to infer that earlier stages of a derivation must have contained sub-trees which would have eventuated in violations if some other rule had not applied to destroy the output sequences in question. This type of argumentation is developed extensively in Perlmutter (1970a). I will refer to it as the necessary intermediate stage type of argument, to distinguish it from the previous type of argument, which I will refer to as the condition duplication type.

2.2.1. As the first case of an argument of the necessary intermediate stage type, let us consider the rule of Topicalization, a rule which optionally preposes NP's to the front of certain clauses, converting the sentences of (22) to the corresponding ones in (23).

(22) a. Richard has never seen Giselle.

b. They didn't realize that we knew them.

c. I've never tried kissing this moray eel.

(23) a. Giselle Richard has never seen.

b. That we knew them they didn't realize.

c. Kissing this moray eel I've never tried.

Now note that this rule can apply to (24a) to convert it to (24b).

(24) a. *I'm not particularly keen on trying kissing this moray eel.

b. Kissing this moray eel I'm not particularly keen on trying.

But, as is indicated by the asterisk on (24a), it is an instance of a doubl-ing violation. Topicalization, however, can "rescue" this structure by breaking up the sequence of present participles. Thus it must be the case that the cause of the ungrammaticality of (24a) is not that the rule inserting the complementizers Poss and ing has been violated, but rather that a certain configuration has been allowed to persist to surface structure. Obviously, therefore, it would be totally mistaken to attempt to block (24a) by anything but an output condition: the ancestors of (24a) must be in-

ferred to be grammatical, because they are needed to provide the source for (24b). This is a paradigm case of the necessary intermediate stage type of argument.

2.2.2. Another set of facts which allows the drawing of exactly the same conclusions is provided by considering the rule of Pseudo-Cleft Formation, the rule which "converts" the sentences of (25) into the corresponding ones of (26).[12]

(25) a. Ultraman replaced the banana in the light socket.

b. Kong realized that the IRT would demand reparations.

c. I'm going to attempt playing the 'Minute Waltz' with my nose.

(26) a. What Ultraman replaced in the light socket was the banana.

b. What Kong realized was that the IRT would demand reparations.

c. What I'm going to attempt is playing the 'Minute Waltz' with my nose.

Just as was the case with (24), this rule can "rescue" sentences. Thus note that while (27a) is ungrammatical, the related (27b), which has been produced by Pseudo-Cleft Formation, is all right.

(27) a. *I was attempting playing the 'Minute Waltz' with my nose.

b. What I was attempting was playing the 'Minute Waltz with my nose.

Again, the inference is clear: the doubl-ing sequence which produces the deviance of (27a) is part of a necessary intermediate stage. Hence it must be thrown out only on the basis of an output condition.

2.2.3. A third argument of this type is provided by the rule of Anaphoric Complement Deletion, which converts the structures underlying (28) into the corresponding ones in (29).

(28) a. Fritz suggested growing a beard, and I approved of $\left\{\begin{matrix}\text{it} \\ \text{growing a beard}\end{matrix}\right\}$.

b. Jezebel was watching me as I entered, and she continued $\left\{\begin{matrix}\text{it} \\ \text{watching me}\end{matrix}\right\}$ as I sat down.

c. You can go on working if you want, but I've got to stop $\left\{\begin{matrix}\text{it} \\ \text{working}\end{matrix}\right\}$.

(29) a. Fritz suggested growing a beard, and I approved.

b. Jezebel was watching me as I entered, and she continued as I sat down.

c. You can go on working if you want, but I've got to stop.

It is at present unclear to me as to whether this rule merely deletes the repeated complement directly, or whether the complement must first have been converted to it. Also, while the small class of verbs to whose complements this rule applies[13] all can appear with present participle complements, I have not investigated this phenomenon thoroughly enough to know whether this constitutes a necessary condition (the impossibility of *I avoided, *I kept, etc. indicates that it is not a sufficient one) for the rule to apply. However these questions are resolved, when this process has been studied further, it seems clear that enough is known about the process for us to be able to use it to cast some light on the doubl-ing phenomenon. For consider the sentences in (30).

(30) a. *You can go on watching this if you want, but I'm stopping watching it.

b. You can go on watching this, if you want, but I'm stopping.

As in the preceding sections, we see that a rule, here Anaphoric Complement Deletion, can repair the unacceptability of (30a). Thus it cannot be out for deep reasons, but must rather be rejected because it fails to satisfy an output condition.

2.2.4. Yet a fourth argument of this type is provided by the rule of Being Deletion, which is possibly the same rule as that discussed in footnote 6 above. This is the rule which, after Stuff-ing has applied, obligatorily (cf. *(31b))

deletes _being_. Thus (31c) would be derived from (31a).

(31) a. Anyone who is undernourished will be treated.

b. *Anyone being undernourished will be treated.

c. Anyone undernourished will be treated.

But if _being_ is obligatorily deleted, how can such sentences as (32) be derived?

(32) Anyone being sassy will be horsewhipped.

I would claim that (32) has indeed undergone Being Deletion -- that its history is that shown in (33).

(33) a. Anyone who is being sassy will be horsewhipped.

b. *Anyone being being sassy will be horsewhipped.

That is, the _being_ which deletes, by this rule, contains the _be_ of the progressive, not that of the copula. This means that it would be wrong to constrain Stuff-ing so that it would not convert (33a) into (33b), despite the fact that in doing so, it produces a doubl-ing sequence which would produce a violation if it made it to surface structure. The rule must be free to apply to (33a), in the most general way, because (33b) is needed as an immediate source for (32).

2.2.5. Another argument of the same type is provided by Klima's rule of Negative Incorporation (cf. Klima (1964)). Briefly, this rule moves a negative element to the right, attaching it to an element like _any_ or _ever_. Thus the sentences in (34) would be converted to the corresponding ones in (35).

(34) a. I won't ever go there.

b. I won't force you to marry anyone.

c. He hasn't signed any radical petitions.

(35) a. I will never go there.

b. I will force you to marry no one.

c. He has signed no radical petitions.

For our present purposes, it is immaterial as to whether the first or the second set of sentences is regarded as more basic -- the only necessary assumption is that some rule moves the negative element either onto or away from, the main verb. For notice that if the negative intervenes in a doubl-ing sequence, the strength of the violation is greatly reduced. Thus compare the sentences in (36).

(36) a. ?He is beginning not signing any radical petitions.

b. *He is beginning signing no radical petitions.

I am at present unable to account for my feeling that (36a) is slightly odd, but the contrast between (36a) and (36b) is surely clear, and this contrast can be accounted for by formulating the doubl-ing constraint in part as an output condition.

2.2.6. The arguments in the five preceding sections seem to me to be compelling: the correct way to characterize doubl-ing violations is in part by means of an output condition.[14] Forbidden sequences of present participles must be granted a

transitory existence, for otherwise, independently motivated rules could not retain their maximally general formulation.

2.3. In conclusion, let me cite one more set of facts which enables one to construct an argument that is roughly the converse of the necessary intermediate stage type. In all the sections of §2.2 immediately above, I gave cases where structures were necessary which would result in bad surface structures, unless some optional rule intervened to "rescue" them. The case below is on in which a structure containing two noncontiguous ing-forms becomes ungrammatical by virtue of the application of a rule which brings the two forms together.

Consider the verb watch. It can take either ing forms or uninflected stems in its complement, as shown in (37).

(37) a. I like watching those girls crochet doilies.

b. I like watching those girls crocheting doilies.

But when the object NP of watch is extracted (by some rule like Question Formation, Relative Clause Formation, Topicalization, etc.), then the contiguity of the two ing-forms produces, for many speakers, a slightly deviant string.

(38) a. ?Which girls do you like watching crochet doilies?

b.??Which girls do you like watching crocheting doilies?

Obviously, then, excluding (38b) by virtue of its superficial doubl-ing sequence is preferable to trying to append some ad hoc condition to the rule which inserts the complementizers Poss and ing.

2.4 To sum up: arguments of both types -- condition duplication (cf. § 2.1) and necessary intermediate stage (cf. § 2.2 (and § 2.3)) can be adduced to support the contention that doubl-ing violations are not to be accounted for by restricting some transformational rule(s), but rather by stating an output condition, or filter, which will throw out any derivation terminating in a tree with certain types of sequences of present participles. The question as to exactly what sequences produce doubl-ing violations is the topic of the immediately following section.

3.

3.1 Lest it be suggested that what is involved in all doubl-ing violations is merely a phonetic dissatisfaction with strings which end in the same phonetic subsequence (thus parallel to rummy, ginny, winy, beery, but not *whiskey-y, *sake-y), let us consider an often-cited example.

(39) The police stopped drinking on campus.

This sentence is ambiguous: it can mean that the police ceased to drink on campus, or that they prevented others from doing so. Now let us examine what happens when (39) is made into a progressive.

(40) The police are stopping drinking on campus.

This sentence is perfectly grammatical, but it has only one reading: that the police are stopping other people from drinking on campus. The fact that (40) is well-formed on

one reading, however, is enough to shoot down any suggestion that what is involved in doubl-ing violations is merely phonetic.

3.2. Presumably, what produces the ambiguity of (39) is the fact that the word drinking can either be taken as a participle or as a noun. That is, (39) can be read as parallel to the sentences in (41), or to those in (42).

(41) a. The police stopped drinking beer on campus.

b. The police stopped punching students out.

(42) a. The police stopped beer-drinking on campus.

b. The police stopped { fornication / drug abuse / lasciviousness / debauchery / bribery / blackmail / etc. } on campus.

The reason that (40) has a good reading, apparently, is that the doubl-ing constraint must be stated in such a way as to be sensitive to the syntactic categories of the two ing-forms, such that while...$[V\underline{ing}]_V[V\underline{ing}]_V$...subsequences can yield violations, subsequences like ...$[V\underline{ing}]_V[V\underline{ing}]_N$... cannot.[16] However, as the two examples in (43) show, limiting the doubl-ing restriction to sequences of ing-forms, while necessary, is not sufficient.

(43) a. Waldo keeps molesting sleeping gorillas.

b. I watched a man who had been flying describing it to some chicks.

Obviously, therefore, it is necessary for the second ing form not only to be a verb, but to be in the complement of the first verb.

3.3 However, even this latter restriction on the power of the output constraint does not yield a sufficient condition for doubl-ing deviancy. For consider the pair of sentences in (44).

(44) a. He expects that breathing deeply will benefit us.

b. He expects breathing deeply to benefit us.

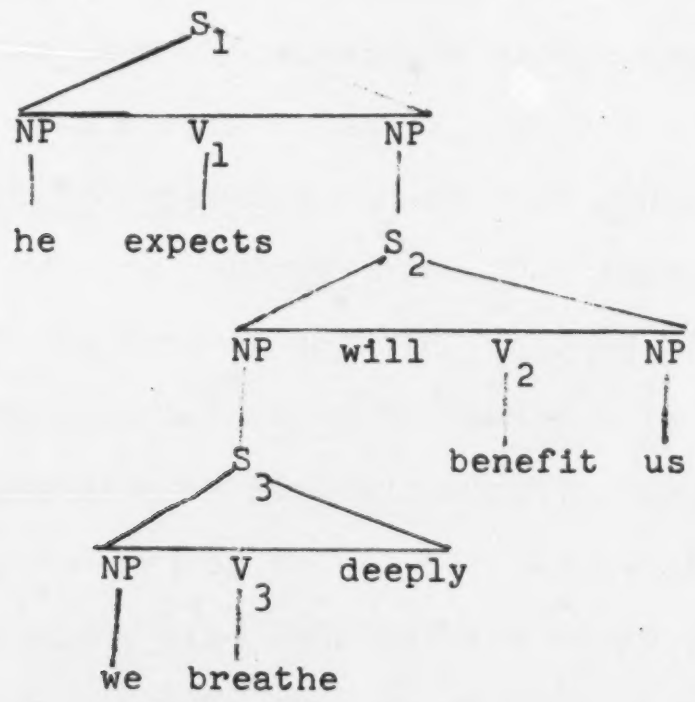
The arguments to the effect that the superficial object of expects in (44b), the phrase breathing deeply, originates in a lower clause, and is removed by a rule of (Subject) Raising, are familiar enough not to require recapitulation, I assume. What is important about these two sentences, for our present concerns, is that even the second one cannot produce a doubl-ing violation. Thus both of the sentences in (45) are well-formed.

(45) a. His expecting that breathing deeply will benefit us is hopelessly naive.

b. His expecting breathing deeply to benefit us is hopelessly naive.

Apparently, what is necessary is to limit the doubl-ing constraint so that only superficially contiguous verbs which were in immediately adjacent clauses in remote structure will be subject to the constraint. In other words, the doubl-ing constraint is a derivational constraint, in the sense of Lakoff (1970), because it links remote and surface structure. That is, since the deep structure of the subject clause of (45b) is that shown in (46),

(46)



the fact that expecting ($=V_1$) and breathing ($=V_3$) can end up as surface structure neighbors is irrelevant for the doubl-ing constraint, which must be stated in such a way as to ensure both remote structure and surface structure adjacency.

Two other constructions which show the necessity of mentioning remote structure adjacency in the statement of the doubl-ing constraint are shown in (47) and (48).

(47) a. He has$_1$ to consider$_2$ getting$_3$ into college.

b. He has$_1$ getting$_3$ into college to consider$_2$.

c. His <u>having</u>$_1$ <u>getting</u>$_3$ into college to consider$_2$ is a drag.

(48) a. There is$_1$ getting$_3$ into college for Matt to consider$_2$.

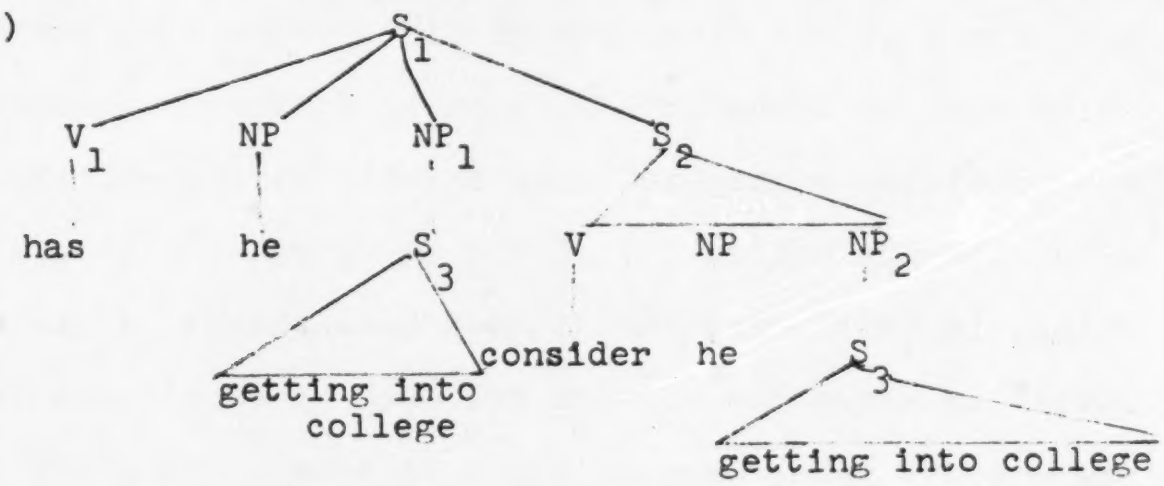
b. There <u>being</u>$_1$ <u>getting</u>$_3$ into college for Matt to consider$_2$ is an unexpected difficulty.

While the complete remote structure of (48a) is opaque, to say the least, I think it can be argued with a fair degree of certainty that the NP <u>getting into college</u> must appear as the direct object of <u>consider</u> in some prior stage of derivation, in part so that the controller NP, <u>Matt</u>, for the application of the rule of <u>Equi</u>, which deletes the subject of <u>getting</u>, can command the deleted element, a condition which is shown in Postal (1970b) to be necessary for <u>Equi</u> to apply. That is, there must be some rule which rips the object of <u>consider</u> up so that it follows <u>there is</u>.

I believe that the analysis of such sentences as (47b) must closely parallel that of (48a) -- again, though I will not argue extensively for the correctness of this claim here (the above remarks about <u>Equi</u> are equally relevant here, however), it seems to me that the superficial direct object of <u>has</u> in (47b) must have appeared as an object of <u>consider</u> at a deeper level of the derivation, and that some rule, quite possibly the same rule that is operative in forming (48a), rips this object out of a lower clause and inserts it into

a higher one. That is, the remote structure of (47b) is probably something which contains (47a) as a subtree. The only other alternative that I can conceive of -- namely that the remote structure of (47b) is roughly that shown in (49)[17] --

(49)



with a deletion rule deleting NP_2 under identity with the higher NP object of has, NP_1, is probably to be ruled out on independent grounds. That is, for all other verbs which, like has in (49), take NP+S objects, the object NP must be animate. A few examples of such verbs are bribe, compel, motivate, get, make, etc. All of these require their direct objects to be animate (cf. *I bribed the table to fall on Judy). But NP_1 in (49) is not animate. Thus assuming (49) to be a possible remote structure would entail abandoning an otherwise valid generalization.

It seems to me, therefore, that the assumption that neither of the occurrences of getting, neither in (47c) nor in (48b), is in a clause which is adjacent to having or being in remote structure is a justified one, and that these two

sentences are merely additional cases of the type of evidence provided by (45b) to the effect that only remote structurally adjacent verbs can cause doubl-ing violations when contiguous in surface structure.

3.4 There is one final set of facts which I am aware of which must be taken into account in finding a statement of the doubl-ing constraint that is not too restrictive. Consider the grammaticality of the sentences in (50), all of which, in their versions without parentheses, contain doubl-ing sequences of verb followed by complement verb, where these verbs were adjacent in remote structure.

(50) a. Ed's resenting (Ann's) getting photographed drunk is just too funny.

b. I am hating (your) wanting to participate in rigged elections more and more these days.

c. Disliking (my) drinking vodka with only her cats for company, Griselda reached for the telephone.

As far as I know, no verbs which allow the present participle of their complement to be preceded by a possessive NP will produce doubl-ing violations. These verbs are all factive predicates (cf. Kiparsky and Kiparsky (1970)), as far as I know. Other examples of such verbs are: regret, protest, defend, prefer, adore, accept, admit, contemplate, etc. Thus apparently the derivational constraint which the discussion above has indicated is necessary to account for

the doubl-ing phenomenon must be restricted along the lines of (51):

(51) The only verbs which can produce doubl-ing violations are either [+Equi Subject] verbs,[18] or are intransitive verbs which have undergone Raising.[19]

As George Lakoff has pointed out to me, however, to state anything like (51) as a restriction on the doubl-ing derivational constraint would be to miss an important generalization. Namely, it is not an accident that it is Raising verbs which behave like [+Equi Subject] verbs with respect to (51). What is important for formulating the constraint correctly is the fact that no other possessive NP could intervene between the two ing forms.

But no derivational constraint could capture this generalization, which is a transderivational one. That is, what is necessary, to exclude such cases as those in (50) from those that the doubl-ing constraint, in its final form, will stigmatize, is a statement that no sequence of the form ...[V*ing*]$_{V_1}$[V*ing*]$_{V_2}$... produces the violation if a possessive NP could intervene between V_1 and V_2 in another derivation from essentially the same remote structure. Obviously, such a condition, since it requires quantifying over possible "parallel" derivations, is beyond the power of even a derivational constraint, unless we are to settle for something on the lines of (51), which would leave us without any ex-

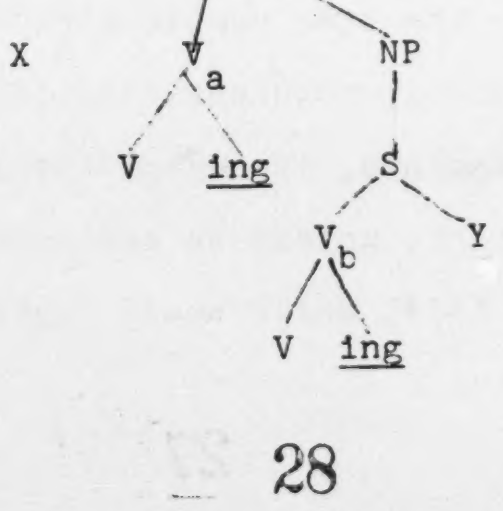
planation for the fact that it is [+Equi Subject] and Raising that are linked, instead of [+Equi Subject] and Dative or Anaphoric Complement Deletion.

It seems to me that a strong case, on grounds independent of these, can be made for the necessity of broadening linguistic theory so that such transderivational constraints are formulable in particular grammars.[20] However, such a demonstration would not be germane to the point at hand, so I will not pursue this issue here. I make no assumptions as to the correct form for stating transderivational constraints, and so I will leave the transderivational addendum which sentences like those in (50) show to be necessary out of the formal statement of the Doubl-ing Constraint, in (52) below.

3.5 To sum up, what the above discussion has indicated is (minimally) necessary to correctly characterize the class of doubl-ing violations is a derivational constraint such as the one in (52).

(52) The Doubl-ing Constraint

All surface structures containing a subtree of the form,



where in remote structure V_a was immediately dominated by S_i and V_b by S_j and where no S node intervened in remote structure between S_i and S_j, are ungrammatical.

4.

4.1 Before beginning to investigate the consequences of (52) for other areas of English, and for linguistic theory in general, let me break (52) into two logical parts.

(53) a. All surface structure subtrees of the form specified in (52) produce doubl-ing violations.

b. No surface structure subtrees which are not of the form specified in (52) produce violations.

At present, the first of these two implications, (53a) (and of course (52) itself, for (53a) merely recapitulates (52)), is too strong. There are some verbs which, mysteriously, do not occasion doubl-ing violations -- avoid is one. More importantly, (53a) seems to be wrong in a far more serious way, because it cannot account for the fact that there is a hierarchy of unacceptability for doubl-ing violations. That is, most speakers, I would imagine, would perceive the sentences in (54) as decreasing in grammaticality, even though they might not agree with the absolute values of grammaticality which the prefixes I have used indicate are correct in my speech.[21]

(54) a. His avoiding contacting Harriet is understandable.

b. ?Red's attempting breathing without a snorkel was ill-considered.

c. ??Red's trying swimming back alone was probably due to all that ale he drank.

d. ?*Harold's continuing fondling Astrid did not produce the desired sensations.

e. *Her keeping resisting him didn't help much, though.

I have no idea as to how (52) should be amended to bring it into line with such a hierarchy. This must be left as a problem for future research. However, for what follows, it is not necessary that we accept (53a). The weaker (53b) will suffice. And it is, to the best of my knowledge, entirely accurate: there are no doubl-ing violations which can be traced to phrase-structural or derivational properties other than those specified in (52).

4.2 Assuming, then, in the absence of counterevidence, the correctness of (53b), consider the following pairs of sentences:

(55) a. That Tillie is working on presentences is tragic.

b. *Tillie's <u>being working</u> on presentences is tragic.

(56) a. That Al is being arrested I find extremely comical.

b. *Al's <u>being being</u> arrested I find extremely comical.

(57) a. That Cat is being adamant complicates things.

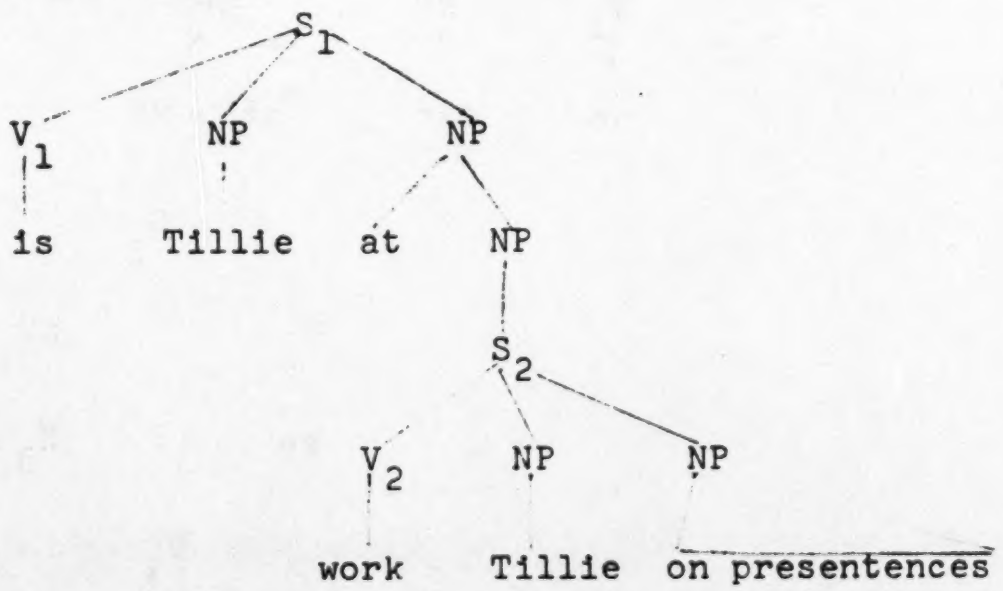
b. *Cat's <u>being being</u> adamant complicates things.

(58) a. That Alice is going to vote is doubtful.

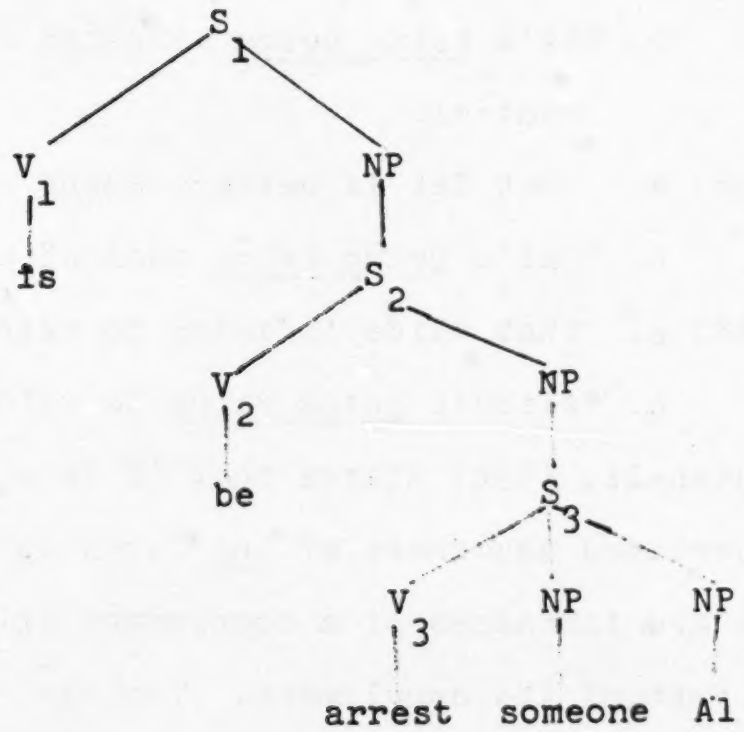
b. *Alice's <u>being going</u> to vote is doubtful.

In a nutshell, (53b) states that it is only possible for the underlined sequences of <u>ing</u> forms to produce violations if they are instances of a complement taking verb followed by the verb of its complement. That is, the remote structures of the subject clauses of (55)-(58) must be as shown in (59)-(62), respectively.

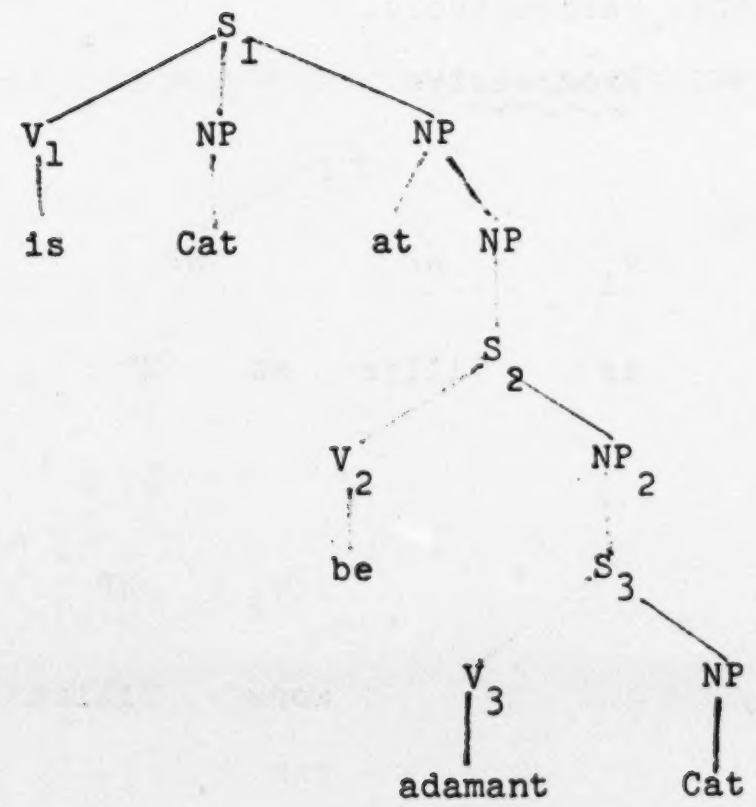
(59) Progressive



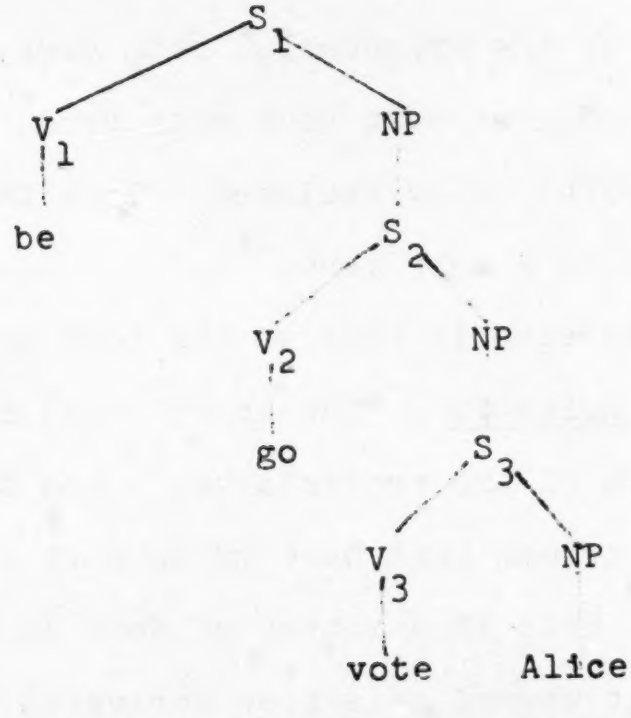
(60) Passive



(61) Copula



(62) be going to



As (59) shows, in order for (53b) to characterize the deviances of (55b), what has previously[22] been analyzed as being not a true verb, but rather as an auxiliary, namely the be of the progressive, must be analyzed as a verb, in consonance with my claim (cf. Ross (1969a) and Ross (in preparation)) that all so-called auxiliaries must be analyzed as main verbs.[23]

The situation is the same with (56b). The is of (56a) is the be of the progressive, in an intransitive alloform,[24] and (55b) has already indicated this form to be a main verb. However, for (52) to be triggered, both ing-forms must be verbs in surface structure (recall the discussion of (39)-(42) above). This means that the being of (56a), a form of the passive "auxiliary", must also be a main verb.

Exactly the same is true in the case of (57). Again, the _is_ of (57a) is the progressive main verb,[25] and since the _being_ which follows must be a main verb, in order for (53b) to allow (57b) to be excluded. Thus the _be_ of the copula must also be a main verb.[26]

Finally, the same is true of the form _go_ in the idiomatic phrase _be going to_ . The _is_ of (58a) is again the intransitive form of the progressive,[27] and the ungrammaticality of (58b) argues that here going must also be analyzed as a main verb. This is a matter of some interest, for it indicates that upward selection for verbs is possible. The _go_ of (62), a complement-taking verb which has an infinitival complement and a meaning of futurity, never appears except when embedded in remote structure as the complement of the intransitive progressive. Thus this type of selection, which is fairly clearly necessary here, in my view, becomes available in other areas of grammar as well.[28]

Thus one consequence of (53b) is that the _Syntactic Structures_ analysis of the auxiliary must be abandoned. The reason is that this analysis forms such a tight system that one loophole in one part of it renders the rest of it untenable. That is, it is not possible to accept the conclusions just argued for to the effect that the _be_ of the progressive, the _be_ of the passive, and the _be_ of the copula are all main verbs, while maintaining the claim that other

"auxiliaries", such as _have_, _do_, and the modals, are to be analyzed as in _Syntactic Structures_. To see this, consider the phenomenon of _Subject Verb Inversion_. In _Syntactic Structures_ , it was observed that certain sentences with _have_ have two inverted forms. An example is (63).

(63) a. Have you any reason to distrust the government?

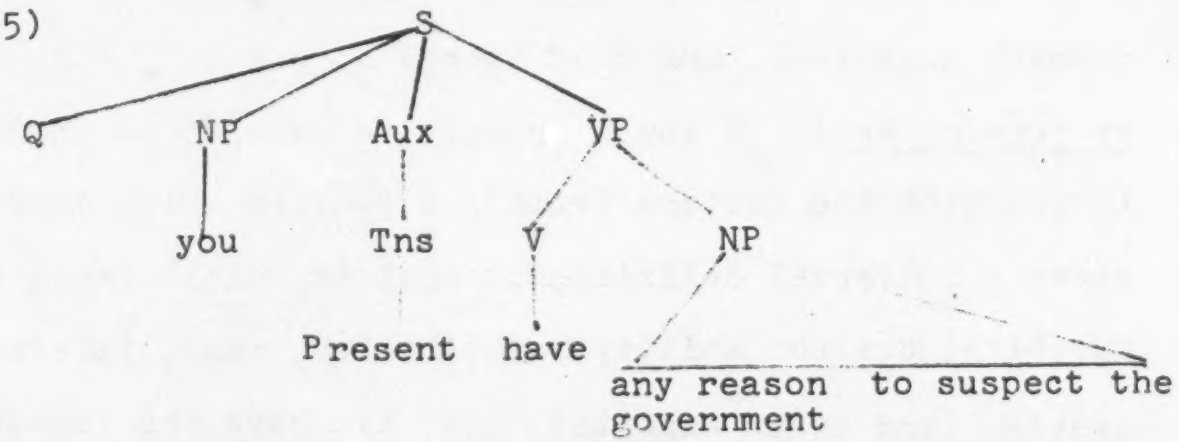
b. Do you have any reason to distrust the government?

Chomsky observed that this was an automatic consequence of the structural description of this rule, which would resemble that shown in (64).[29]

(64) $$Q - NP - Tns \begin{Bmatrix} \text{Modal} \\ \underline{\text{have}} \\ \underline{\text{be}} \end{Bmatrix} - X$$

Since, in his analysis, the structure of the sentences in (63) would be that shown in (65),

(65)



the structural description in (64) could choose to regard _have_ as part of the term to be inverted, producing (63a),

or as the main verb, with only the tense morpheme inverting, producing (63b).

What is problematic for this analysis is that given the correctness of structures like (55)-(58), it would predict exactly the same double questions for progressives (and passives and copulas). That is, if anything like (64) is right, it will generate not only the desired (66), but also the ill-starred (67).

(66) a. Are you thinking about Pre-Cyclic Buttering?

b. Were they searched?

c. Is Fred sallow?

(67) a. *Do you be thinking about Pre-Cyclic Buttering?

b. *Did they be searched?

c. *Does Fred be sallow?

If structures like (55)-(58) are necessary, then it is a fact about English that some main verbs invert in forming questions, and that others do not (cf. *Liked you my term paper?). I would propose to mark those which can invert with the feature [+Aux], a feature which must be given a universal definition. That is, while verbs meaning futurity, desire, ability/possibility, need, intent, inception (and other aspects), etc. can have the feature [+Aux] in some language, presumably no verb which meant condescend to, avoid, abhor, insist on, etc. could. The matter is an

extremely complex one, but I believe that it is already possible to make a number of nontrivial observations about the universal content of the feature [+Aux]. Only when this has been achieved, however, will it be possible to overcome the inadequacy of all analyses which include rules with structural descriptions resembling that of (64). Such analyses, which merely list elements which behave similarly together (as is the case of the terms in the curved brackets in (64)), can never explain why some elements can function together, but others cannot. What must be appended to any such analysis is a theory of possible and impossible lists. To postulate a universal feature, like [+Aux], and to restrict its content as narrowly as possible, is, in effect, to provide such a theory. This problem requires a far lengthier discussion than I can devote to it here. I will return to the matter in Ross (in preparation).

Two other consequences of accepting the Doubl-ing Constraint, as formulated in (52), are possibly obvious, but they should probably be noted in passing here. The first is that (52) is an excellent example of a derivational constraint, that is, of a grammatical process linking noncontiguous levels of derivations. Some linguists dispute the existence of such processes,[30] so the existence of the Doubl-ing Constraint constitutes one of a number of to

my mind compelling arguments that no theory which does not make such grammatical devices available can attain adequacy. Similar remarks apply, of course, in connection with the fact that, as was observed in §3.5 above, a more adequate statement of the Doubl-ing Constraint than (52) would require the power of a transderivational constraint.

Finally, to return to the topic broached in §1, it is clear that that part of the Doubl-ing Constraint which could be called an output condition is not "stupid" as (4) was (but cf. fn. 5). Thus the need to state a condition for English which is at least as complex and structure-specific as (52) implies that Chomsky's claim (cf. Chomsky (1970)) to the effect that the only kinds of possible output conditions are "stupid", i.e. structure-independent, ones is incorrect.

Footnotes

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I would like to thank a number of friends for their criticisms and suggestions: Bruce Fraser, Ken Hale, George Lakoff, and Paul Postal.

Any errors which may remain are due to sunspots.

[1]This term is due to Postal (cf. Postal (1970a)).

[2]Some examples of this construction which seem likely not to derive from have sentences are my lap (cf. *the lap which I have), etc. and my sister (cf. the nonsynonymous the sister who I have), etc.

[3]These are largely factive predicates, in the sense of Kiparsky and Kiparsky (1970), though not exclusively these, contrary to their claim. Cf. such sentences as His having been there alone is po sible/likely/doubtful.

[4]This necessary terminology was discovered by Dave Perlmutter.

[5]Jim Herringer has brought to my attention evidence that even (4), alas, is not entirely stupid. Thus note

that (i) and (ii) are both well-formed.

(i) The spelling of this is regular.

(ii) This's spelling is regular.

Similarly with many other examples, such as These's being plural means further debugging, That's vowel is lax, etc. What this means is that some conditions must be placed on (4) to the effect that the elements in its second term must be being used demonstratively, and not metalinguistically. Thus even (4), since its correct reformulation would link semantics and surface structure, must be a derivational constraint.

Actually, it may be possible to use Herringer's observation to cast some light on the source of such linguistically puzzling NP's as the object of of in (i), if my intuitions about the grammaticality of (iii) are correct.

(iii) The { word / phrase / article / morpheme / lexeme / yakon / etc. } this's spelling is regular.

That is, if (iii) is grammatical, and if (ii) derives from something like (iii) by way of a rule of Metalinguistic Noun

Deletion, then the fact that both (ii) and (iii) are exceptions to (4) can be stated once -- in a static stupid template, ordered before the metalinguistic noun which this must be assumed to modify in remote structure has been deleted.

[6]In addition, the rule deletes be obligatorily, and being optionally. Thus the exclamation corresponding to He is flatulent is either Him flatulent?!? or possible Him being flatulent?!?, but not *Him be flatulent?!? The existence of such a deletion rule lends support to Fillmore's analysis of have as deriving from be + with, for the exclamation corresponding to He has a Caddy is Him with a Caddy?!? For some reason unknown to me, there are no exclamations corresponding to sentences with expletive subjects. Thus cf. the ungrammaticality of *It (being) muggy in Fresno?!? *It (being) possible that one of my features is ad hoc?!?!?

A number of interesting properties of exclamations were brought to my attention by an interesting unpublished paper by a Cornell student, Philip Cohen.

[7]Cf. Ross (1970) for an exposition of the performative analysis of declaratives.

[8]One fact, in addition to complementizer choice, which supports this proposal, is that just as exclaim is a factive predicate, so exclamations presuppose the truth of the state of affairs they describe, instead of asserting it. This would

follow automatically if (8b) underlay the exclamations of (7).

[9]The rule thus presupposes the correctness of the analysis of the English auxiliary which I suggested in Ross (1969), under which all auxiliaries are main verbs, for otherwise such NP's as men being photographed could not be generated.

[10]Actually, this sentence provides evidence for a slightly modified version of Stuff-ing, in which the ing would be inserted without the relative pronoun being deleted. Only later, if the relative pronoun constituted the entire subject of a verb followed by ing would this pronoun be deleted. Thus (15) would pass through a stage containing ...who having been wounded..., which would obligatorily lose its pronoun. In contrast, the relative pronoun which in (19), which constitutes only part of the subject NP, neither of which, could not be deleted. It is possible that this relative pronoun deletion rule could be extended by making it obligatory before any non-finite verb form, thus accounting for the contrast between a razor with which to shave, and a razor (*which) to shave with.

[11]Some speakers reject sentences like (19), but all I have asked accept it if which is replaced by them. The resulting clause is just as good as that in (19) for my present purposes: it could not have resulted from a Poss + ing complement.

[12]I have put "converts" in quotes, because it has been obvious for some time to workers in generative grammar that the underlying structure of pseudo-cleft sentences like those in (26), while it may contain as a subpart such simple sentences as those in (25), is in reality far more complex. In fact, I suspect that the underlying structure of a sentence like (26a) is really more like the structure which underlies (i) than that underlying (25a).

(i) The answer to the question as to what Ultraman replaced in the light socket is that he replaced the banana in it.

For some research leading along essentially identical lines, cf. Faraci (1970).

[13]The class includes, in addition to the three verbs in (28)-(29), such verbs as begin, finish, start, commence, agree, insist, keep on, cease, reconsider, persist, try (but not endeavor, or attempt), etc. This last contrast between what seem to be near synonyms (i.e. try and attempt) would appear to mean that the rule must be lexically governed--that is, that it can have exceptions.

[14]I might mention in passing two more partial arguments of the necessary intermediate type. I say "partial" because the facts on which these arguments rest are unclear. First, note that the output condition must mention immediate contiguity of the ing-forms -- if a particle, for instance, intervenes, then no violation ensues. Thus consider the following paradigm:

(i) She's taken up knitting sweatshirts.

(ii) ?She's taken knitting sweatshirts up because she has nothing better to do.

(iii) She's taking up knitting sweatshirts.

(iv)??She's taking knitting sweatshirts up because she has nothing better to do.

The sentences in (ii) and (iv) are worse than those in (i) and (iii), because of the fact that a sentential object intervenes between verb and following particle. But if my (very weak) intuitions to the effect that (iv) is slightly worse than (ii) are right, then presumably, this extra dollop of deviance is to be attributed to the violation of the doubl-ing constraint.

Another possible argument might be derivable from some paradigm like (v)-(viii).

(v) He began his polishing of the yoyo.

(vi) He began polishing the yoyo.

(vii) He was beginning his polishing of the yoyo.

(viii) *He was beginning polishing the yoyo.

If it could be shown that (vi) arose optionally from (v), via the rule of Equi, then the output of this rule could violate the doubl-ing restriction, as is the case in (viii). Since, however, (vii), the putative source of (viii) is grammatical, we would have one more case of a necessary intermediate stage type argument.

As the iffy tone of these last sentences indicates, though, I am extremely dubious that (v) is the source of (vi), and I have not been able to find a truly convincing case of optional Equi with a verb like begin.

[15]I have no explanation for why such sentences as those in (38b), whose doubl-ing sequence has arisen via the extraction of a previously intervening constituent, should be systematically better, for many speakers, than such sentences as (1d), where this was not the case. Nor do I understand why (38a) itself is somewhat odd. Possibly this oddness means that the doubl-ing constraint must be formulated in more general terms than I have attempted in this paper. Further research is needed here.

[16]This is presumably the reason that sentences like (i) are OK.

(i) He is going (shark-)fishing.

That is, as the incorporability of the object of fishing suggests, the word fishing is probably a nour, when it follows go. This impression is confirmed by the impossibility of (ii).

(ii) *he is going drinking beer.

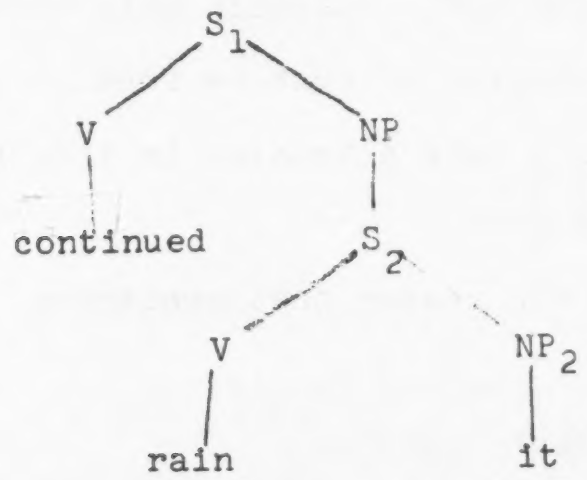
[17]I accept McCawley's argument that all verbs are initial in remote structure in English. Cf. McCawley (1970).

[18]That is, verbs which require in remote structure that the subject of their complement clause be identical to either their direct object (i.e. I bribed Harry $[_S$for$\left\{\begin{matrix}\text{Harry}\\ \text{*Sandra}\end{matrix}\right\}$ to leave$]_S$)

or to their subject (i.e. Pauline struggled [$_S$for $\left\{\begin{matrix}\text{Pauline}\\ \text{*Rafe}\end{matrix}\right\}$ to remove the slimy tentacle from her heaving bosom]$_S$).
For a discussion of the necessity of allowing such constraints on remote structure, and for a justification of the particular feature [+Equi Subject], cf. Perlmutter (1968).

[19]One such verb is continue, in some uses (cf. Perlmutter (1970b)). That is, the remote structure of (1b) would be, schematically, that shown in (i).

(i)



The surface structure of (1b) would be derived from (i) by inserting Poss + ing complementizers, and then by raising NP_2 to become the superficial subject of continued.

[20]For a pioneering paper in this important new area of linguistic theory, cf. Lakoff (1970b).

[21]Some Southern speakers have informed me that they can find no doubl-ing violations in their speech except for the verb keep (and for the be of the progressive -- cf. immediately below).

[22]Cf. e.g. Chomsky (1957, 1965).

[23]One reason for assuming an underlying <u>at</u> in (some) progressive sentences can be seen from the grammaticality of such sentences as (i)

(i) He was whistling in the dark as Vice President and he's still at it now.

[24]Cf. Perlmutter (1970b) for a discussion of such transitive-intransitive complement verb pairs. The source for my claim that the progressive <u>be</u> of (55) is transitive, and associated in remote structure with <u>at</u>, as suggested in (59), while the progressive <u>be</u> of (56) is not, is the ungrammaticality of (i).

(i) *Al was being arrested when I left, and he was still at it at suppertime.

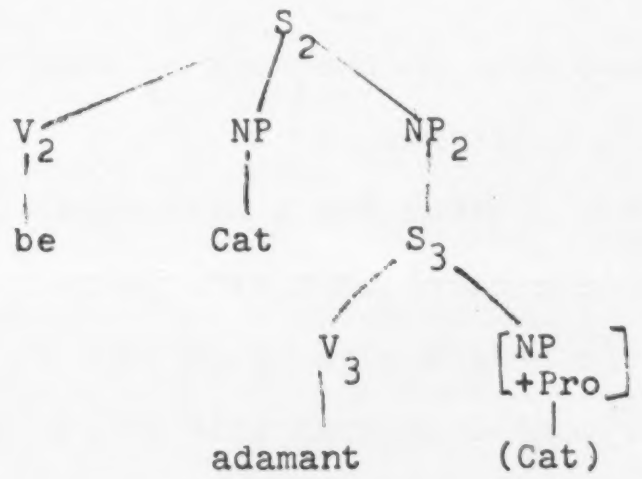
[25]Probably the transitive alloform, if my intuitions that (i) is grammatical are correct:

(i) Cat may be being adamant now, but I'll be surprised if he's still at it tomorrow.

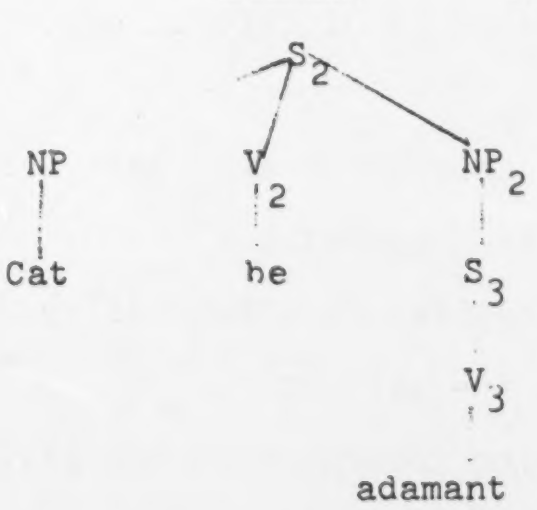
[26]This conclusion was argued for independently, in Ross (1969b). When that paper was written, I believed it to be necessary for the <u>be</u> of the copula to be a transitive main verb. I now see no reason for such an assumption. All the evidence presented in Ross (1969b) to the effect that adjectives must, at some stage of derivation, be embedded in an NP following a main verb <u>be</u> is consonant with the structure

dominated by S_2 in (61), under the quite reasonable assumption that Raising, when applied to the complement of be, will produce such a structure as (i) (and eventually (ii)).

(i)



(ii)



It is to NP_2 in (i) that all the rules mentioned in Ross (1969b) as requiring NP's to follow be refer.

Notice that I am assuming here, although nothing rests on this assumption, that Raising is effected by a process of copying the subject NP of the complement, with subsequent deletion of a doomed proform left behind (presumably by the same late deletion rule which Postal shows to be necessary for Equi (cf. Postal (1970b))). There is independent support

for the assumption that Raising involves a copying process, but I will not go into this tangential matter here.

[27]This is argued for not only by the impossibility of (i), but by the fact that be going to can be preceded by there, as in (ii).

(i) *Alice was going to vote when I left, and she's still at it.

(ii) There is$_1$ going$_2$ to be$_3$ a full scale investigation of perversion by the FBI.

This there must have originated on the cycle whose main verb is be$_3$ of (ii), and must have been successively moved up to become the derived subject first of go$_2$, and finally of is$_1$, the intransitive progressive.

[28]Another case where upward selection appears necessary is discussed in Ross (1971).

[29]He did not observe the magnitude of the problem occasioned by a rule which inverts all instances of have. Some of the many sentences which any analysis must exclude are shown below.

(i) *had you the valet press your pants?

(ii) ?*Has there to be an investigation?

(iii) *Has the IRS you by the short hairs?

etc.

[30]Cf. e.g. Chomsky (1970).

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